

LIGHT EMISSION TYPE DISPLAY DEVICE

Patent Number: JP62194227
Publication date: 1987-09-26
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Requested Patent: ☐ JP62194227
Application Number: JP19860035939 19860220
Priority Number(s):
IPC Classification: G02F1/133; G09F9/00; G09F9/35
EC Classification:
Equivalents: JP2033907C, JP7066124B

Abstract

PURPOSE: To display a color video which is bright and has excellent contrast of respective colors by using a voltage control double refraction (ECB) liquid crystal having a sharp luminance-voltage characteristic as a light valve and using a monochromatic excitation light source.

CONSTITUTION: The light source 13 which radiates approximately the single wavelength light of a blue or UV part is used. R, G, B phosphor layers 11 which are made to emit light of R, G and B respectively by the excitation light from the light source 13 are used. An ECB liquid crystal cell 14 is constituted by respectively horizontally and vertically orienting the nematic liquid crystals having positive and negative $\Delta\epsilon$ between the electrode surfaces of a pair of transparent substrates 2, and 8 provided with transparent conductive films. The voltage of R-times the off-cells is impressed to the on cells when the number of scanning lines is N. If the matrix panel is subjected to line sequential driving by an ordinary voltage averaging method. Since the double refractivity of both picture elements differs, the intensity of the excitation light source passing the 2nd polarizing light 9 varies. The emission intensity from the phosphor layers is thereby made different and the contrast is raised.

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